REMARKS

This Application has been carefully reviewed in light of the Office Action mailed April 19, 2004. Claims 1-15, 17-46, and 48-62 are pending in the Application and stand rejected.

Section 103 Rejections

The Examiner rejects 1-15, 17-46, and 48-62 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,223,041 issued to Egner et al. ("*Egner*") in view of U.S. Patent No. 6,366,780 issued to Obhan ("*Obhan*"), and further in view of U.S. Patent No. 6,539,221 issued to Vasudevan et al. ("*Vasudevan*"). For the reasons set forth below, Applicant respectfully disagrees with these rejections.

Claim 1, as amended, recites a geo-location tool that is operable to "estimate bandwidth parameters for a geo-location area <u>on a per service class basis</u> based on the [received] data" and a allocation engine operable to "allocate bandwidth in the geo-location area <u>on the per service class basis</u> based on its bandwidth parameters." Claim 32, as amended, recites similar, although not identical, limitations. The underlined limitations were added to Claim 1 from Claim 5 (and to Claim 32 from Claim 36). None of the cited references disclose a geo-location tool operable to estimate bandwidth parameters for the geo-location area <u>on a per service class basis</u> and an allocation engine operable to allocate bandwidth in the geo-location area <u>on the per service class basis</u> based on the bandwidth parameters. The Examiner states that *Obhan* discloses this limitation. (Office Action, pp. 4-5; citing *Obhan*, Col. 23; Lines 1-16 and 45-47). Neither the sections of *Obhan* cited by the Examiner nor the other portions of *Obhan* disclose using *service class* to estimate bandwidth parameters and allocate bandwidth in the geo-location area. In addition, the Examiner has not provided any explanation of how the cited section discloses using service class to estimate bandwidth parameters and allocate bandwidth in the geo-location area. Furthermore, Applicant also has found no disclosure of these limitations in *Egner* or *Vasudevan*.

In addition, Claim 1 recites a geo-location tool operable to "generate, based on the data, a current usage map indicating real-time bandwidth being utilized at the geo-location area, the current usage map being subdivided into a plurality of bins representing the geo-

location area, each bin representing the location of a portion of the geo-location area and containing data associated with the corresponding portion of the geo-location area." Claim 32, as amended, recites similar, although not identical, limitations. The Examiner concedes that *Egner* is silent as to a geo-location tool operable to generate, based on the data, a current usage map indicating real-time bandwidth being utilized at the geo-location area. However, the Examiner states that it is apparent that *Obhan* discloses generating a current usage map indicating real-time bandwidth being utilized at the geo-location area. (Office Action, p. 3; citing *Obhan*, Col. 2, Lines 40-45). The sections of *Obhan* cited by the Examiner as supporting his position merely disclose that the *Obhan* system receives current demand data and potential demand data from the wireless network. However, nothing in the section cited by the Examiner discloses that a current usage map is generated.

Furthermore, as recognized by the Examiner, *Obhan* does not disclose that the current usage map is subdivided into a plurality of bins representing the geo-location area, each bin representing the location of a portion of the geo-location area and containing data associated with the corresponding portion of the geo-location area, as recited in Claim 1, and similarly, although not identically, in Claim 32. The Examiner states that this limitation is found in *Vasudevan* (generally citing to the Abstract and Figures 1-4). However, the "bins" disclosed in *Vasudevan* are used to estimate future traffic demand, not to generate a current usage map.

For at least these reasons, Applicant respectfully submits that amended Claims 1 and 32 are allowable over the cited references. Therefore, Applicant requests reconsideration and allowance of Claims 1 and 32, as well as all claims that depend from those claims.

Furthermore, Claims 2-4, 6-15 and 17-31 incorporate of all the limitations of amended Claim 1, which is allowable over the cited references for the reasons discussed above. Therefore, Claims 2-4, 6-15 and 17-31 are also allowable over the cited references. In addition, Claims 33-35, 37-46 and 48-62 incorporate of all the limitations of amended Claim 32, which is allowable over the cited references for the reasons discussed above. Therefore, Claims 33-35, 37-46 and 48-62 are also allowable over the cited references.

Moreover, these dependent claims are allowable over the cited references because they recite additional limitations not disclosed in the cited references, as discussed below. For example, regarding Claims 7 and 38, the cited references fail to disclose a source map

comprising sources of <u>bit usage</u> in the geo-location area. The Examiner cites language in Claim 1 of *Obhan* (Col. 23; Lines 1-16) as disclosing such a source map. The sections of *Obhan* cited by the Examiner fail to make any reference to generating a source map comprising sources of bit usage in the geo-location area and to estimate bandwidth parameters for the geo-location area based on the source map, nor has the Examiner provided any explanation of how the cited section discloses generating a source map comprising sources of bit usage in the geo-location area.

For at least this additional reason, Claims 7 and 38 are allowable over the cited references. Furthermore, because Claims 8-9 and 39-40 depend from and incorporate the limitations of Claims 7 and 38, respectively, Claims 8-9 and 39-40 are also allowable. Therefore, Applicant respectfully requests reconsideration and allowance of Claims 7-9 and 38-40.

Regarding Claims 12 and 43, the cited references fail to disclose a subscriber usage profile indicating the <u>probability</u> of a subscriber engaging in a connection in a geo-location area. The Examiner states that *Obhan* discloses this limitation. The language in *Obhan* cited by the Examiner as disclosing this limitation (*Obhan*, Col. 2; Lines 40-45) does not disclose a subscriber usage profile indicating the probability of a subscriber engaging in a connection in a geo-location area, nor has the Examiner provided any explanation of how, in his opinion, the cited section discloses this element of the present invention. The cited passage merely indicates that the *Obhan* system uses potential usage data to manage the use of the available spectrum according to the operating goals of the system's operator. (*Obhan*, Col. 2; Lines 40-45).

For at least this additional reason, Claims 12 and 43 are allowable over the cited references. Furthermore, because Claims 13-15 and 44-46 depend from and incorporate the limitations of Claims 12 and 43, respectively, Claims 13-15 and 44-46 are also allowable. Therefore, Applicant respectfully requests reconsideration and allowance of Claims 12-15 and 43-36.

Regarding Claims 17, 21, 48, and 52, the cited references fail to disclose a current usage map comprising a <u>peak rate</u> for each active or potential connection in a geo-location area. The Examiner states that *Obhan* discloses these limitations. The language in *Obhan* cited by the Examiner as disclosing this limitation (*Obhan*, Col. 6; Lines 15-22 and 40-49)

merely discloses that the *Obhan* system tracks spectrum supply and demand in each corridor and incentivizes use of underutilized spectrums. There is no discussion in *Obhan* of a current usage map comprising a peak rate for each active or potential connection in a geo-location area, nor has the Examiner provided any explanation of how the cited section discloses a current usage map comprising a peak rate for each active or potential connection in a geo-location area.

For at least this additional reason, Claims 17, 21, 48, and 52 are allowable over the cited references. Therefore, Applicant respectfully requests reconsideration and allowance of Claims 17, 21, 48, and 52.

Regarding Claims 28 and 59, the cited references fail to disclose an <u>interference contribution map</u> indicating the impact on resource usage of supporting various bandwidths at the geo-location area. The Examiner states that *Obhan* discloses this limitation. The language in *Obhan* cited by the Examiner as disclosing this limitation (*Obhan*, Col. 6; Lines 57-67) does not, in fact, disclose an interference contribution map, let alone an interference contribution map that indicates the impact on resource usage of supporting various bandwidths at a geo-location area. The cited passage merely indicates that when spectrum use exceeds a preset threshold, use of the spectrum is de-incentivized by adjusting the cost of the usage to encourage price-sensitive users to discontinue use to free up spectrum resources. (*Obhan*, Col. 6; Lines 57-67). Furthermore, the Examiner has failed to provide any explanation of how the cited section discloses an interference contribution map indicating the impact on resource usage of supporting various bandwidths at the geo-location area.

For at least this additional reason, Claims 28 and 59 are allowable over the cited references. Furthermore, because Claims 29-30 and 60-61 depend from and incorporate the limitations of Claims 28 and 59, respectively, Claims 29-30 and 60-61 are also allowable. Therefore, Applicant respectfully requests reconsideration and allowance of Claims 28-30 and 59-61.

Finally, with respect to Claims 31 and 62, the cited references fail to disclose an allocation engine operable to generate a <u>bandwidth supply map</u> indicating the available bandwidth at a geo-location area <u>based on bandwidth allocation, a total bandwidth, and an interference contribution bandwidth for a geo-location area</u>, as recited in Claim 31. Claim 62 recites similar, although not identical, elements. The Examiner states that *Obhan* discloses

this limitation. The language in *Obhan* cited by the Examiner as disclosing this limitation (*Obhan*, Col. 6; Lines 35-67) does not, in fact, disclose a bandwidth supply map, let alone a bandwidth supply map indicating the available bandwidth at a geo-location area based on bandwidth allocation, a total bandwidth, and an interference bandwidth contribution for a geo-location area. The cited passage merely indicates that when spectrum use exceeds a preset threshold, use of the spectrum is de-incentivized by adjusting the cost of the usage to encourage price-sensitive users to discontinue use to free up spectrum resources. (*Obhan*, Col. 6; Lines 57-67). Furthermore, the Examiner has failed to provide any explanation of how the cited section discloses an allocation engine operable to generate a bandwidth supply map indicating the available bandwidth at a geo-location area based on bandwidth allocation, a total bandwidth, and an interference contribution bandwidth for a geo-location area.

For at least this additional reason, Claims 31 and 62 are allowable over the cited references. Therefore, Applicant respectfully requests reconsideration and allowance of Claims 31 and 62.
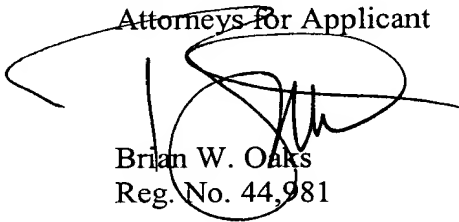
CONCLUSION

Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Brian W. Oaks, Attorney for Applicant, at the Examiner's at (214) 953-6986.

Although no other fees are believed due, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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